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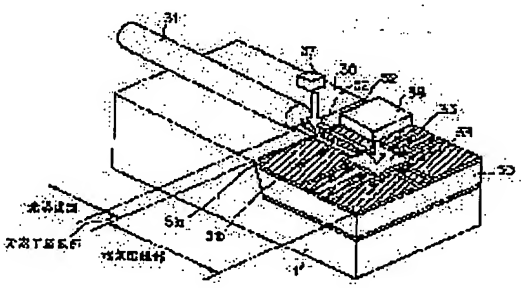
(54) OPTO-ELECTRIC HYBRID MOUNTING BOARD, MANUFACTURING METHOD AND OPTO-ELECTRIC HYBRID INTEGRATED CIRCUIT

(57) Abstract:

PURPOSE: To provide an optical integrated circuit with small loss in optical waveguide function, and advantages in optical bench function and high-frequency wiring function, by forming an optical element mounting part made up of a projected terrace on a circuit board and an electric wiring part made up of a dielectric layer and a conductive pattern put on a surface or an inner part of the dielectric layer.



CONSTITUTION: An upper projected face part of a silicon substrate 1 is used as a silicon terrace 30 for mounting an optical element. An optical fiber 31 as an optical waveguide is held adequately in an optimum position in a V-shaped groove of a silicon terrace part 30. An Au-Sn solder on a thermal oxide film on the face of the silicon terrace 30 is patterned to form a thin-film electrode 52 fixed in a state of contact with a surface electrode of an optical function element on the silicon terrace 30. The thin-film electrode 52 is connected

electrically to surface-electrode conductive patterns 51a and 51b on a face of a dielectric layer 50 formed in a recessed part of an electric wiring part on the silicon substrate 1. In addition, the dielectric layer 50 is embedded around an electric circuit silicon terrace 35, and an electric circuit conductive pattern 51 is formed on the face of the silicon terrace 35.

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